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Antibacterial resistance, a public health problem

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The search and development of antibacterial arises as the need to treat infectious diseases of bacterial origin, in human health as animal health. The discovery of molecules with antibacterial potential gave humanity peace of mind for many years regarding food health and safety, however, what Alexander Fleming warned in 1945 "the excessive use of penicillin will cause the selection of resistant bacteria".

In Veterinary Medicine antibacterial have been used as growth promoters and for therapeutic purposes, the latter being the purpose for which they were created, however, inappropriate and unsupervised therapeutic use, as well as administration by untrained personnel, has brought as a consequence, the appearance of resistant and even multi-drug resistant strains, a situation that does not leave many therapeutic alternatives.

In addition to the above, the use of antibacterial in animal production results in the involuntary release of these into the environment, through wastewater, from the production units, water that will undoubtedly be used in other production units of land or aquatic animals, agricultural production or that released in rivers, lakes, lagoons, ending in the oceans, where they would cause ecological changes.

Bacteria are extraordinary microorganisms capable of adapting, evolving and resisting antibacterial molecules in a short time, through the exchange of genetic material, which is well documented, between bacteria of the same species and even with other bacterial genera, which affect the human and animal population or both, such as zoonotic diseases.

The World Organization for Animal Health (OIE) and the World Health Organization (WHO) have recognized the problem we are facing, and have issued recommendations. The OIE recommends guaranteeing adequate access to effective antibacterial agents to treat animal diseases, highlighting the need for this access to be regulated by trained veterinary doctors and their sale, distribution, and regulation by government agencies responsible for animal health and agri-food safety of each country. For its part, the WHO recommends a general reduction in the use of all classes of antibacterial of medical importance in animals destined for food production, including the complete restriction of these drugs, to stimulate growth and prevent diseases without prior diagnosis.

According to the above, to address this problem, it is necessary to address the concept of a single health, since human health and animal health are involved, which as explained by the concept are

interdependent and are directly linked to ecosystems in the which coexist and to address the problem, the inter-institutional participation of organizations such as the United Nations Food and Agriculture Organization, OIE and WHO is needed.

Finally, it is up to the general population to understand the importance of the appropriate use of antibacterial drugs and to everyone involved in health issues, it is necessary to make accurate and timely diagnoses, as well as sensitivity tests to antibacterial before starting treatment.

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